



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/645,440

08/20/2003

Bruce J. Thompson

40134.1US11

7989

23552 7590 04/01/2008

MERCHANT & GOULD PC

P.O. BOX 2903

MINNEAPOLIS, MN 55402-0903

EXAMINER

BOYCE, ANDRE D

ART UNIT

PAPER NUMBER

3623

MAIL DATE

DELIVERY MODE

04/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/645,440

Applicant(s)

THOMPSON ET AL.

Examiner

Andre Boyce

Art Unit

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/4/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-16 and 18-39 have been examined.

Claim Objections

2. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. The application is missing claim 17. For examination purposes, the Examiner has treated claim 17 as canceled. Appropriate correction is required.
3. Claim 18 is objected to because of the following informalities: The claim is dependent from claim 17, however there is no claim 17 in the application. Appropriate correction is required.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.
5. Claims 13 and 22-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims recite "[a] computer program product readable by a computer and encoding instructions..." As seen in Applicant's specification on page 13, lines 2-15, computer readable media may comprise computer storage media and communication media, wherein communication media typically embodies computer readable instructions, data

Art Unit: 3623

structures, program modules or other data in a modulated data signal such as a carrier wave or other transport mechanism and includes any information delivery media. As such, the claim may be interpreted as a computer program product, including communication media that typically embodies computer readable instructions, data structures, program modules or other data in a modulated data signal such as a carrier wave. A carrier wave is not a proper medium, and thus non-statutory subject matter. See MPEP §2106.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-7, 9-13, 16, 18-22, 24, 25 and 30-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirsch et al (WO 97/25682).

As per claims 1 and 22, Hirsch et al disclose a method of scheduling a plurality of employees in a health care environment (i.e., dedicated management system that schedules and optimizes utilization of operating room suite resources, pg 7, lines 26-29), wherein at least two patients receive treatment during a predetermined time period (figure 12), said scheduling method comprising: for each patient, evaluating patient care requirements (i.e., patient record including proposed medical procedure, pg 15, lines 26-29), wherein the patient care requirements correspond to actual

Art Unit: 3623

employee time requirements necessary to satisfy the patient care requirements (i.e., procedures listing screen, including average time, figure 7); in response to the patient care requirement evaluation (i.e., various goals and constraints of the scheduling system, pg 18, lines 28-30 and pg 19, lines 1-3), adjusting scheduling time of at least one patient to distribute the corresponding employee time requirements throughout a predetermined time period (i.e., cases which already exist for a particular day can easily be rescheduled by dragging the line to a different calendar date, page 18, lines 24-26); and automatically scheduling employees in response to the distributed employee time requirements (i.e., surgeon selects time interval for starting procedure, while providing the scheduling system sufficient latitude to optimize the resulting schedule, pg 15, lines 21-23).

As per claim 2, Hirsch et al disclose defining a predetermined number of job-types (i.e., staff record, figure 8), wherein each job-type has an associated skill level (i.e., service code and roles, including hierarchy #, figure 1); scheduling job-types to accommodate the patient requirements; and associating employees with the scheduled job-types (i.e., feasible schedules determined by the system, figure 13).

As per claim 3, Hirsch et al disclose the predetermined time period is a day (pg 14, line 10), the method further comprising: dividing the day into intervals (i.e., divides the day into a small number of multi-hour periods, pg 14, lines 10-11); and in evaluating the patient care requirements, determining the patient care requirements on a per-interval basis (i.e., system preferences allow a surgeon to select a time interval for starting a procedure, pg 15, lines 21-23).

As per claim 4, Hirsch et al disclose the patient care requirements are averaged over more than one interval (i.e., average times to perform procedures are calculated and stored, pg 16, lines 25-27).

As per claim 5, Hirsch et al disclose defining acceptable shift lengths; and scheduling job types based on acceptable shift lengths (i.e., feasible schedules determined by the system, figure 13).

As per claim 6, Hirsch et al disclose each employee has a predetermined patient care capability (i.e., service title and procedures performed, figure 8) and wherein the method further comprises scheduling employees in relation to patient care capability (i.e., service code and role for a particular case/procedure, figure 1).

As per claim 7, Hirsch et al disclose the patient care capability relates to indirect and direct patient care activities (i.e., pre-op information, figure 11).

As per claim 9, Hirsch et al disclose dividing the predetermined time into intervals (i.e., divides the day into a small number of multi-hour periods, pg 14, lines 10-11); and displaying a plurality of patient schedules in relation to time to provide a visual indication of the patient care requirements for each interval (figure 12).

As per claim 10, Hirsch et al disclose calculating patient requirement values (i.e., average time to perform procedure, pg 16, lines 24-27) related to required employee (i.e., surgeon) based on the patient care requirements for a plurality of intervals (i.e., average time to perform) and displaying the calculated values (figure 7).

As per claim 11, Hirsch et al disclose displaying employee shift information in relation to time (i.e., surgery start and surgeon) to provide a visual indication of

scheduled employee information in relation to scheduled patient information (figure 12).

As per claims 12 and 13, Hirsch et al disclose calculating a total value of employee time for each interval; displaying the calculated employee values in a grid form (i.e., estimated length of scheduling, figure 11); comparing patient requirement values and employee values for each interval to determine efficiency (i.e., scheduling via the system to increase utilization rate, based upon scheduling of staff, pg 20, lines 5-10).

As per claim 16, Hirsch et al disclose generating an ideal staff model, based on job types (i.e., staff record, figure 8); using the ideal staff model, generating an ideal staff schedule (i.e., feasible schedules determined by the system, figure 13); and displaying the ideal staff model (figure 13).

As per claim 18, Hirsch et al disclose associating employees with the staff model to finalize the employee schedule (i.e., service code and roles, including hierarchy #, figure 1).

As per claim 19, Hirsch et al disclose defining a set of drivers to define the rules in creating the ideal staff model (i.e., service code and roles, including hierarchy #, figure 1).

As per claim 20, Hirsch et al disclose the drivers comprise: a nurse to non-nurse employee ratio; a direct patient care percentage value for nurses; and a direct patient care percentage value for non-nurses (i.e., optimization factors and constraints including an interaction factor among surgeons, patients,

Art Unit: 3623

anesthesiologists, CRNAs, RNs, Techs, etc., thus including both direct and indirect care tasks, page 11, lines 12-15 and hospital policies such as proactive and reactive emergency policies, pg 19, lines 1-3).

As per claims 21 and 24, Hirsch et al disclose calculating an efficiency value for a schedule wherein the efficiency value accommodates for intermittent patient acuity (i.e., optimization factors and constraints including an interaction factor among surgeons, patients, anesthesiologists, CRNAs, RNs, Techs, etc., thus including both direct and indirect care tasks, page 11, lines 12-15 and hospital policies such as proactive and reactive emergency policies, pg 19, lines 1-3).

As per claim 25, Hirsch et al disclose a method of scheduling employees in a health care environment (i.e., dedicated management system that schedules and optimizes utilization of operating room suite resources, pg 7, lines 26-29) comprising: compiling a plurality of patient profiles, each profile associated with a different patient (i.e., patient input screen, figure 2), and wherein each profile comprises information related to the direct patient care needs of the associated patient (i.e., average time to perform procedure, pg 16, lines 24-27); compiling a plurality of employee profiles, each profile associated with a different employee and wherein each profile comprises information related to the patient care capability of the associated employee (i.e., calculation of average time to perform a procedure, pg 16, lines 25-27 and average time of an average surgeon to complete procedure, pg 16, lines 25-27); calculating scheduling efficiency information relating to a generated schedule of patients and employees based on the patient profiles and

Art Unit: 3623

employee profiles (i.e., optimization factors and constraints including an interaction factor among surgeons, patients, anesthesiologists, CRNAs, RNs, Techs, etc., thus including both direct and indirect care tasks, page 11, lines 12-15 and hospital policies such as proactive and reactive emergency policies, pg 19, lines 1-3); and automatically adjusting the schedule to generate a more efficient schedule (figure 14).

Claims 30-37 are rejected based upon the same rationale as the rejections of claims 1-7, 9-12, 16 and 18-21 since they are the system claims corresponding substantially to the method claims.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8, 14, 15, 23, 26-29, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirsch et al (WO 97/25682), in view of Rosse (USPN 6,640,212).

As per claim 8, Hirsch et al does not disclose each employee further has a predetermined non-patient care capability relating to performing non-patient care activities, and wherein the method further comprises: calculating a staff efficiency valued based on scheduled activities, wherein the activities relate to patient care and

non-patient care activities and wherein the efficiency evaluates hours of direct patient care required per treatment activity. Rosse discloses non-client duties that do not involve patient participation (column 8, lines 11-14). Further, Rosse discloses the percent of shift assigned, which includes both client and non-client duties (figure 15). Both Hirsch et al and Rosse are concerned with healthcare management, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include calculating a staff efficiency value based on scheduled activities, wherein the activities relate to patient care and non-patient care activities in Hirsch et al, as seen in Rosse, as an effective means of determining the efficiency of the staff members in terms of percent of shift assigned, thus making the Hirsch et al system more effective in determining surgeon availability during a shift.

As per claim 14, Hirsch et al disclose automatically staggering the start time of at least two patients to allow one employee to substantially service the needs of the at least two patients based on a predetermined stagger value. Rosse discloses pairing the duties corresponding to client activities with available and qualified staff members (column 10, lines 56-58), wherein duties include the staff helping the client with grooming, wherein multiple clients may be helped simultaneously (figure 16). Both Hirsch et al and Rosse are concerned with healthcare management, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include substantially servicing the needs of the at least two patients in Hirsch et al, as seen in Rosse, thereby utilizing the staff more effectively, thus improving the overall efficiency of the Hirsch et al system.

As per claims 15 and 23, Hirsch et al does not disclose entering an idle time; and automatically scheduling subsequent patients based on the idle time. Rosse discloses non-client duties that do not involve patient participation (column 8, lines 11-14). Further, Rosse discloses the percent of shift assigned, which includes both client and non-client duties (figure 15). Both Hirsch et al and Rosse are concerned with healthcare management, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include calculating a staff efficiency value based on scheduled activities, wherein the activities relate to patient care and non-patient care activities in Hirsch et al, as seen in Rosse, as an effective means of determining the efficiency of the staff members in terms of percent of shift assigned, thus making the Hirsch et al system more effective in determining surgeon availability during a shift.

As per claims 26 and 27, Hirsch et al does not disclose entering a stagger time; entering an idle time; and automatically shifting the patient schedules based on the stagger time and the idle time, and automatically adjusting the employee schedules in response to the automatic shifting of the patient schedules. Rosse discloses pairing the duties corresponding to client activities with available and qualified staff members (column 10, lines 56-58), wherein duties include the staff helping the client with grooming, wherein multiple clients may be helped simultaneously (figure 16). Both Hirsch et al and Rosse are concerned with healthcare management, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include substantially servicing the needs of the at least two

Art Unit: 3623

patients in Hirsch et al, as seen in Rosse, thereby utilizing the staff more effectively, thus improving the overall efficiency of the Hirsch et al system.

As per claim 28, Hirsch et al disclose evaluating the patient profiles to resolve conflicts (i.e., patient input screen, figure 2).

As per claim 29, Hirsch et al disclose evaluating the employee profiles to resolve conflicts (i.e., staff record, figure 8).

Claims 38 and 39 are rejected based upon the same rationale as the rejections of claims 25-29, since they are the graphical user interface claims corresponding substantially to the method claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

-Detjen et al (USPN 5970466) disclose scheduling appointments for an office or business.

-Andre et al (USPN 6278978) disclose improving an agent schedule, by unscheduling an agent from a shift in the schedule.

-Lane et al (US 2002/0026342) disclose a scheduling engine for optimally scheduling the allocation of a set of service providers.

-Rassman et al (USPN 4937743) disclose prospective scheduling, periodic monitoring, and dynamic management.

Art Unit: 3623

-DeBusk et al (USPN 5995937) disclose a health care information management system that utilizes modular and reusable software objects.

-Rensimer et al (USPN 5845253) disclose processing patient data.

-Kintner et al (USPN 6732079) disclose determining the best mix of regular and contract employees.

-Bucci et al (USPN 6823315) disclose dynamically scheduling a workforce.

-Crockett et al (USPN 6044355) disclose scheduling personnel in a work environment.

-Leamon (USPN 6970829) discloses forecasting, allocating and scheduling in a contact or call center.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre Boyce whose telephone number is (571)272-6726. The examiner can normally be reached on 9:30-6pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3623

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andre Boyce/
Patent Examiner, Art Unit 3623
March 27, 2008